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United States Department of Agriculture
 Bureau of Animal Industry

SUGGESTIONS FOR CURING AND SMOKING TURKEYS.

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The widespread interest in smoked turkey has resulted in numerous requests for a suitable procedure to be followed in producing this article of cured meat. In studies by the Bureau of Animal Industry a method for curing and smoking turkeys has been developed which has proved satisfactory under experimental conditions. Based on this work the following suggestions are offered for the benefit of persons who may wish to undertake the preparation of smoked turkey on a small scale.

Turkeys to be used for curing and smoking should be well fattened, equal to U. S. Grade A or AA. They should be subjected to the usual overnight fasting period (with access to water), then bled, brained, and carefully picked dry, or the feathers removed by the slack-scald method, about 30 seconds agitation, in water heated to 126° F. Care should be taken not to break the skin in the dressing and handling process. Birds with badly torn skin should be rejected. The full scald is undesirable since the skin is more likely to be injured when this method is used. Immediately after being picked, the birds should be drawn as for roasting, removing all viscera, including the giblets which are not utilized for curing and smoking, and then chilled to a temperature of 30° to 40° F. In preparation for curing, the head, neck, shanks, and feet are then removed, leaving the body cavity open at both the front and rear ends with and unobstructed passageway between the two ends. The removal of the tendons in the drumstick is suggested to provide for better penetration of the curing ingredients into the meat of that portion of the bird.

A suitable curing mixture consists of 6 pounds of salt, 3 pounds of brown sugar, and 2 ounces of saltpeter dissolved in 4-1/2 gallons of water. This pickle contains approximately 13 percent of salt and has a salinometer reading of about 70° at a temperature of 38° F. Experience has shown that about four times this indicated quantity of pickle is required to cover 100 pounds of moderately large, drawn turkeys when packed carefully in a 50-gallon barrel.

The drawn turkeys should be packed carefully and close together in a suitable container, such as a crock or a clean, well-soaked, odorless hardwood barrel, and weighted down with a clean board and brick or stone so they will not float when the curing solution is added. Then pour the solution over the turkeys until they are covered with a slight excess of liquid. It is important that the temperature of both the meat and the

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pickle be approximately 38° F. when the curing process is begun and be kept at that point throughout the curing period. At weekly intervals the turkeys should be removed from the container and repacked in order to remix the pickle and to insure that it will come in contact with all parts of the birds.

Our experiments indicate that turkeys which weigh from 14 to 20 pounds after removal of the head, neck, shanks, feet, and viscera, should remain in the curing solution approximately 1-1/4 days for each pound.

The cured turkeys should be washed in warm water, hung up until dry, and then smoked, using hardwood. A smokehouse temperature of 135° to 140° F. for 16 hours is more effective in producing desirable color than lower temperatures. However, a temperature of approximately 110° F. for 20 hours results in about 3 percent less weight loss in the smokehouse than the higher temperature for the shorter period of time. After 4 weeks' aging at 68° the difference is even more striking, the birds smoked at the lower temperature yielding about 7 pounds more of stored product per 100 pounds of weight prior to curing. During the smoking process the turkey should be hung by either legs or wings in such a way as to provide for maximum exposure of skin as well as an opportunity for further drainage of curing fluid, especially from the body cavity. The smoked turkey produced by this process must be cooked before eating.

According to further experimental results of the Bureau, the average turkey, excepting the Broad Breasted Bronze, yields about 61 percent of its live field weight, 63 percent of its fasted live weight, 70 percent of its dressed weight, and 83 percent of its drawn weight in freshly smoked turkey. Average losses due to overnight fasting are 3 percent of live field weight, dressing losses (blood and feathers) are 10 percent of fasted live weight, drawing losses 15 percent of dressed weight, and losses resulting from preparation for smoking (consisting of removal of certain parts ordinarily left with the drawn carcass, - namely: cleaned giblets 3.7 percent, loose abdominal fat 3 percent, and complete neck with skin 4.3 percent) 11 percent of the dressed weight. The brine-cured carcass weighs about 105 percent of the precured or prepared-for-smoking weight while the cured, smoked carcass weighs about 93 percent of the precured weight when smoked at approximately 110° F. for 20 hours and about 90 percent when smoked at 140° for 16 hours. Carcasses aged at 68° F. for 28 days weighed 76 percent of their freshly smoked weight when smoking was done at 140° and 81 percent when smoked at 110°. Broad Breasted Bronze turkeys lose only 9 percent of their fasted live weight during dressing and 13 percent of dressed weight during full drawing. In addition, the dressed, uncured Broad Breasted Bronze carcass has about 49 percent muscle tissue compared with 43 percent for other types of turkeys, which should result in a correspondingly higher yield of smoked meat.

To produce a smoke-cooked turkey that is ready for eating without further cooking, the following procedure is recommended by the Extension Service, Texas A. & M. College, College Station, Texas, in Bulletin No. B-163 (1948). After selection and drawing as described above, proceed as follows:

"Step 1. - Chill bird to remove animal heat before pumping for curing.

Step 2. - Pump the bird with brine mixture by injecting 10 percent of its weight. Stitch with a pressure pump using small or medium sized needle. Pump bird to give uniform distribution of brine in all muscles. This will require on each side of the bird three stitches in breast, one in thigh, one in drumstick, one in wing and one in back.

Brine Mixture for Curing: This mixture should give a reading of 45 to 50 percent saturation when measured with a sodium chloride salometer: 10 gallons of water; 9 pounds of salt; 1 pound prague powder; 1-1/2 pounds sugar; 4 ounces ham spice emulsion.

Step 3. - After bird has been pumped, cover it with the brine mixture. Be sure bird is covered with the solution. Keep it in this solution for three days.

Step 4. - Remove bird after three days and drain thoroughly. Be sure none of the brine is left in the pockets of body cavities. Put it in stockinette and hang breast down.

Step 5. - After it is about dry, put it in the smokehouse with the heat control set at 170° F. As soon as it is completely dry, smoke can be applied.

Step 6. - Smoke to a light lustrous pecan nut brown. This usually takes 8 to 12 hours.

Step 7. - When the desired color is obtained, increase the temperature in the smokehouse to 185° F. Cook the bird until the inside temperature at the thickest breast muscle area is 160° F. To determine this heat accurately it is necessary to insert an inside meat thermometer in the bird at the thigh joints and breast muscles. Approximately 20 percent shrinkage may be expected from this process.

Step 8. - This process will cook the bird sufficiently to be eaten without additional cooking. This cooked product will not keep in ordinary refrigerator temperatures any longer than other meats such as cured ham. If the birds are to be held longer than two weeks they should be frozen, packaged and held at 0° F. temperature."

